

REMARKS

Claims 1 - 19, 21 - 26 and 28 - 51 have been amended.

Claims 1 - 51 are present in the subject application.

In the Office Action dated October 2, 2002, the Examiner has rejected claims 1 – 30 and 46 – 49 under 35 U.S.C. §101 and has rejected claims 1 – 51 under 35 U.S.C. §103(a). Favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

The Examiner has rejected claims 1 - 30 and 46 - 49 under 35 U.S.C. §101 because the claimed invention is allegedly directed toward non-statutory subject matter. The Examiner takes the position that the subject matter of claims 1 - 30 and 46 - 49 are related to a data structure or a method, where the limitations are directed to nonfunctional descriptive material instead of a description of the physical or logical relationship within or to create the data structure.

This rejection is respectfully traversed. Initially, independent claims 1 and 8 are directed toward a file or data structure. Data structures and computer programs which impart functionality when employed as a computer component are functional descriptive material. M.P.E.P. §2106(IV)(B)(1). When functional descriptive material is recorded on some computer-readable medium, the material becomes structurally and functionally interrelated to the medium and is statutory in most cases. Id. A claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components that permit the data structures functionality to be realized and, therefore, is statutory. M.P.E.P. §2106(IV)(B)(1)(a). Accordingly, claims 1 and 8 have been amended to recite the file structure being embodied in a program storage device

readable by a machine and to facilitate content adjustment. Thus, the file structure constitutes functional descriptive material, where the claims recite this material to be encoded on a machine-readable medium, which as discussed above, is statutory subject matter.

Independent claims 16 and 23 are directed toward a method or process. In order to be statutory, a claimed computer-readable process must either result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or have been known to a skilled artisan, or be limited toward a practical application within the technological arts. M.P.E.P. §2106(IV)(B)(2)(b). A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result. M.P.E.P. §2106(IV)(B)(2)(b)(ii). Accordingly, independent claims 16 and 23 have been amended to recite a method of adjusting content of a content object, where the method includes the steps of: storing a list or outline of identifiers in the identifier file object; storing content entities identified by the identifiers in a plurality of content file objects; and enabling the manipulation of the identifiers by a user to alter content of the content object. Thus, the method produces a list or outline of identifiers that has the practical application of altering content of the content object. In other words, the identifier list or outline is a concrete, tangible and useful result that is applied to alter content of the content object, thereby limiting the claims to a practical application. Accordingly, independent claims 16 and 23 are directed toward statutory subject matter.

Dependent claims 2 - 7, 9 - 15, 17 - 22, 24 - 30 and 46 - 49 are considered to recite statutory subject matter for substantially the same reasons discussed above in relation to their parent claims.

The Examiner has rejected claims 1 - 51 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,557,722 (DeRose et al). Briefly, the DeRose et al patent discloses a data processing system and method for generating a representation of an electronic document, for indexing the electronic document, for navigating the electronic document using its representation and for displaying the electronic document on an output device. The system and method are used with electronic documents having descriptive markup which describes the content or meaning of the document rather than its appearance. Each markup element defines a node or element in a tree, where the tree is represented by providing a unique identifier for each element and for accessing a descriptor of the element. The element descriptor preferably includes indications of the parent, first child, last child, left sibling, right sibling, type name and text location for the element. The document representation is used to facilitate navigation of the text for constructing navigational aids, such as table of contents, and full text indexing.

In contrast, the present invention is directed toward a system, method and data structure (e.g., for encoding in a storage device) for storing a content object in a data repository as a group of hierarchically related content entities. Each content entity is contained in a separate file object. A list or outline containing container and non-container identifiers defines the content, order and structure of the content object. This list or outline is stored as a separate file object.

Accordingly, independent claims 1, 8, 16, 23, 31 and 38 have been amended to recite the features of the list or outline being manipulable by a user to alter the content of the content object without manipulating the content entities identified by the content entity identifiers. Claims 31 and 38 have been further amended to enhance clarification of the claimed program instruction features.

The Examiner takes the position that the DeRose et al patent teaches a system, method and/or program of instruction for indexing and rendering electronic documents, especially electronic books. A book has a plurality of elements. An element directory consists of an array of element descriptors, each as a content entity representing an element of the document as the content object. The element directory is created as a file object by an indexing process in the mass storage device. The Examiner further alleges that the DeRose et al patent does not explicitly teach a plurality of file objects each containing a content entity identified by one of the content entity identifiers, but that the patent discloses utilization of pointers within the element descriptors to reference a particular text chunk in an open text file. The Examiner takes the further position that it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the DeRose et al process to include the above-discussed features lacking in that patent's disclosure in order to enable an electronic document, such as an electronic book, to be navigated and indexed in accordance with its contents.

This rejection is respectfully traversed since the DeRose et al patent does not disclose, teach or suggest the features recited in the independent claims of the list or outline being manipulable by a user to alter the content of the content object without manipulating the content entities identified by the content entity identifiers. Rather, the DeRose et al patent discloses that the element directory (which the Examiner construes as the list or outline) is generated from an electronic document markup file indicating the document content (See Column 5, lines 46 - 58; Column 9, lines 10 - 20; and Column 12, lines 51 - 58) to provide a fixed representation of that content for document navigation, rendering and/or indexing purposes (See Column 5, lines 21 - 22; Column 9, lines 17 - 20; and Column 12, lines 54 - 56). Accordingly, the element directory is not manipulable by a user and does not facilitate alteration of document content as recited in

the claims. Since the DeRose et al patent does not disclose, teach or suggest, the features recited in independent claims 1, 8, 16, 23, 31 and 38 as discussed above, these claims are considered to be in condition for allowance.

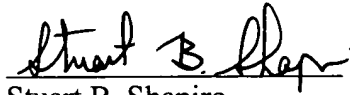
Claims 2 - 7, 9 - 15, 17 - 22, 24 - 30, 32 - 37 and 39 - 51 depend, either directly or indirectly, from the independent claims and, therefore, include all of the limitations of their parent claims. Dependent claims 2 - 7, 9 - 15, 17 - 19, 21 - 22, 24 - 26, 28 - 30, 32 - 37 and 39 - 51 have been amended to further clarify features and/or to be consistent with their amended parent claims. The dependent claims are considered to be in condition for allowance for substantially the same reasons discussed above in relation to their parent claims and for further limitations recited in these claims.

In addition to the foregoing, it would not be obvious to modify the DeRose et al patent to attain the claimed invention. Specifically, this patent is directed to the rendering of an electronic document for display without modification of document content as discussed above. The content of the document is indicated in a markup file, while the element directory is a fixed representation of the document content. In contrast, the present invention is directed toward a system enabling manipulation of lists or outlines of content entity identifiers to alter content within the content object. Since the DeRose et al patent is concerned with display of documents, the patent is not directed toward content object editing. Thus, there is no reason, suggestion or motivation to modify the patent in a manner contrary to its specification to achieve the claimed invention. Thus, the DeRose et al patent does not render the claimed invention obvious.

Amendment
U.S. Patent Appln. No. 09/489,730

The application, having been shown to overcome issues raised in the Office Action, is considered to be in condition for allowance and Notice of Allowance is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stuart B. Shapiro", is written over a horizontal line.

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APPENDIX

The following are the amended claims with markings to show the changes made, where brackets ('[]') indicate removed text and underlining indicates additional text.

--1. (Twice Amended) A program storage device readable by a machine, tangibly embodying a file structure for storing a content object having a plurality of content entities[,] to facilitate content adjustment, said file structure comprising:

[a] an identifier file object containing a list of content entity identifiers defining the content of the content object; and

a plurality of content file objects, each containing a content entity identified by one of the content entity identifiers contained in said list;

wherein said list of content entity identifiers is manipulable by a user to alter content of the content object without manipulating the content entities identified by said content entity identifiers.

2. (Amended) The [file structure] device of claim 1, wherein said file structure further [comprising] comprises an attribute file object containing at least one attribute pertaining to the content object.

3. (Amended) The [file structure] device of claim 1, wherein at least one attribute[s] is extracted from the content object.

4. (Amended) The [file structure] device of claim 1, wherein ones of the content entities further comprise components associated with the content object, and said file structure further [comprising] comprises one or more associated component file objects.

5. (Amended) The [file structure] device of claim 1, wherein the content object is one of a book, a collection of images, an album, and a video.

6. (Amended) The [file structure] device of claim 1, wherein the content object is a book and ones of the content entities are one of volumes, chapters [or] and sections.

7. (Amended) The [file structure] device of claim 4, wherein at least one of the associated components comprises an image.

8. (Twice Amended) A program storage device readable by a machine, tangibly embodying a file structure for storing a hierarchically structured content object having a plurality of content entities[,]
to facilitate content adjustment, said file structure comprising:

[a first] an identifier file object containing an outline of containers and content entity identifiers defining the content and hierarchical structure of the content object; and

a plurality of content file objects, each containing a content entity identified by one of the content entity identifiers contained in said [list] outline;

wherein said outline is manipulable by a user to alter content of the content object without manipulating the content entities identified by said content entity identifiers.

9. (Amended) The [file structure] device of claim 8, wherein said file structure further [comprising] comprises an attribute file object containing at least one attribute pertaining to the content object.

10. (Amended) The [file structure] device of claim 8, wherein at least one attribute[s] is extracted from the content object.

11. (Amended) The [file structure] device of claim 8, wherein ones of the content entities further comprise components associated with the content object, and said file structure further [comprising] comprises one or more associated component file objects.

12. (Amended) The [file structure] device of claim 8, wherein the content object is one of a book, a collection of images, an album, and a video.

13. (Amended) The [file structure] device of claim 8, wherein the content object is a book and the containers are one or more of a book, a volume, [or] and a chapter.

14. (Amended) The [file structure] device of claim 8, wherein the content object is a book and ones of the content entities are one of volumes, chapters [or] and sections.

15. (Amended) The [file structure] device of claim 11, wherein at least one of the associated components comprises an image.

16. (Twice Amended) A method [for providing a file structure for storing] of adjusting content of a content object having a plurality of content entities, comprising the steps of:

[creating a file object containing] storing a list of content entity identifiers defining the content of the content object within an identifier file object; [and]

[creating] storing the content entities identified by the content entity identifiers within a plurality of content file objects[,] with each content file object containing a content entity identified by one of the content entity identifiers contained in said list; and

enabling manipulation of said list of content entity identifiers by a user to alter content of the content object without manipulating the content entities identified by said content entity identifiers.

17. (Amended) The method of claim 16, further comprising the step of [creating an attribute file object containing] storing at least one attribute pertaining to the content object in an attribute file object.

18. (Amended) The method of claim 16, wherein at least one attribute[s] is extracted from the content object.

19. (Amended) The method of claim 16, wherein ones of the content entities further comprise components associated with the content object, and further comprising the step of [creating] storing the components in one or more associated component file objects.

21. (Amended) The method of claim 16, wherein the content object is a book and ones of the content entities are one of volumes, chapters [or] and sections.

22. (Amended) The method of claim 19, wherein at least one of the associated components comprises one of an image, a video segment, [or] and an audio segment.

23. (Twice Amended) A method [for storing a hierarchically structured] of adjusting content of a content object having a plurality of content entities[,]comprising the steps of:

[creating a first file object containing] storing an outline of containers and content entity identifiers defining the content and hierarchical structure of the content object within an identifier file object; [and]

[creating] storing the content entities identified by the content entity identifiers within a plurality of content file objects[,] with each content file object containing a content entity identified by one of the content entity identifiers contained in said [list] outline; and

enabling manipulation of said outline by a user to alter content of the content object without manipulating the content entities identified by said content entity identifiers.

24. (Amended) The method of claim 23, further comprising the step of [creating an attribute file object containing] storing at least one attribute pertaining to the content object within an attribute file object.

25. (Amended) The method of claim 23, wherein at least one attribute[s] is extracted from the content object.

26. (Amended) The method of claim 23, wherein ones of the content entities further comprise components associated with the content object, and further comprising the step of [creating] storing the components in one or more associated component file objects.

28. (Amended) The method of claim 23, wherein the content object is a book and the containers are one or more of a book, a volume, [or] and a chapter.

29. (Amended) The method of claim 23, wherein the content object is a book and ones of the content entities are one of volumes, chapters [or] and sections.

30. (Amended) The method of claim 26, wherein at least one of the associated components comprises one of an image, a video segment [or] and an audio segment.

31. (Twice Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing a file structure for storing a content object having a plurality of content entities, comprising:

a first set of program instructions for creating [a] an identifier file object containing a list of content entity identifiers defining the content of the content object; and

a second set of program instructions for creating a plurality of content file objects, each containing a content entity identified by one of the content entity identifiers contained in said list;

wherein said list of content entity identifiers is manipulable by a user to alter content of the content object without manipulating the content entities identified by said content entity identifiers.

32. (Amended) The [method] device of claim 31, further comprising [the step of] a third set of program instructions for creating an attribute file object containing at least one attribute pertaining to the content object.

33. (Amended) The [method] device of claim 31, wherein at least one attribute[s] is extracted from the content object.

34. (Amended) The [method] device of claim 31, wherein ones of the content entities further comprise components associated with the content object, and further comprising [the step of] a third set of program instructions for creating one or more associated component file objects.

35. (Amended) The [method] device of claim 31, wherein the content object is one of a book, a collection of images, an album, and a video.

36. (Amended) The [method] device of claim 31, wherein the content object is a book and ones of the content entities are one of volumes, chapters [or] and sections.

37. (Amended) The [method] device of claim 34, wherein at least one of the associated components comprises one of an image, a video segment, [or] and an audio segment.

38. (Twice Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for storing a hierarchically structured content object having a plurality of content entities, comprising:

a first set of program instructions for creating [a first] an identifier file object containing an outline of containers and content entity identifiers defining the content and hierarchical structure of the content object; and

a second set of program instructions for creating a plurality of content file objects, each containing a content entity identified by one of the content entity identifiers contained in said [list] outline;

wherein said outline is manipulable by a user to alter content of the content object without manipulating the content entities identified by said content entity identifiers.

39. (Amended) The [method] device of claim 38, further comprising [the step of] a third set of program instructions for creating an attribute file object containing at least one attribute pertaining to the content object.

40. (Amended) The [method] device of claim 38, wherein at least one attribute[s] is extracted from the content object.

41. (Amended) The [method] device of claim 38, wherein ones of the content entities further comprise components associated with the content object, and further comprising [the step of] a third set of program instructions for creating one or more associated component file objects.

42. (Amended) The [method] device of claim 38, wherein the content object is one of a book, a collection of images, an album, and a video.

43. (Amended) The [method] device of claim 38, wherein the content object is a book and the containers are one or more of a book, a volume, [or] and a chapter.

44. (Amended) The [method] device of claim 38, wherein the content object is a book and ones of the content entities are one of volumes, chapters [or] and sections.

45. (Amended) The [method] device of claim 41, wherein at least one of the associated components comprises one of an image, a video segment [or] and an audio segment.

46. (Amended) The [file structure] device of claim 1, wherein the content entity identifiers include information to identify the content file objects containing content entities associated with those identifiers [without specifying locations of the content entities].

47. (Amended) The [file structure] device of claim 8, wherein the content entity identifiers include information to identify the content file objects containing content entities associated with those identifiers [without specifying locations of the content entities].

48. (Amended) The method of claim 16, wherein the content entity identifiers include information to identify the content file objects containing content entities associated with those identifiers [without specifying locations of the content entities].

49. (Amended) The method of claim 23, wherein the content entity identifiers include information to identify the content file objects containing content entities associated with those identifiers [without specifying locations of the content entities].

50. (Amended) The [program storage] device of claim 31, wherein the content entity identifiers include information to identify the content file objects containing content entities associated with those identifiers [without specifying locations of the content entities].

51. (Amended) The [program storage] device of claim 38, wherein the content entity identifiers include information to identify the content file objects containing content entities associated with those identifiers [without specifying locations of the content entities].--